

SRD -OS LAB SESSION 3 [\(28.7.2025\)](#)

courtesy: geeksforgeeks

Understanding Arrays in Shell Scripting

An array is a structured arrangement of similar data elements. Within shell scripting, an array is a variable that holds multiple values, whether they are of the same type or different types. It's important to note that in shell scripting, everything is treated as a string. Arrays adhere to a zero-based index, which signifies that indexing initiates from 0.

How to Declare Array in Shell Scripting?

Arrays can be declared in a shell script using various approaches:

1. Indirect Declaration

In this method, you assign a value to a specific index of the array variable.

There's no need to declare the array beforehand.

```
ARRAYNAME[INDEXNR]=value
```

2. Explicit Declaration

With explicit declaration, you first declare the array and then assign values to it.

```
declare -a ARRAYNAME
```

3. Compound Assignment

This method involves declaring the array along with its initial set of values. You can later add additional values to

the array.

```
ARRAYNAME=(value1 value2 ....  
valueN)
```

Alternatively, you can use index numbers to assign values explicitly:

```
ARRAYNAME=( [1]=10 [2]=20 [3]=30 )
```

Printing Array Values in Shell Script:

To display array elements, you have several options:

Here is a ``array_test.sh`` script explaining multiple options. (You can create script with any name)

```
#!/bin/bash
```

```
# To declare a static Array  
arr=("Jayesh" "Shivang" "1"  
"Vipul" "Nishant" "2")
```

```
# To print all elements of the array  
echo "All elements of the array:"  
echo "${arr[@]}"  
echo "${arr[*]}"
```

```
# To print the first element  
echo "The first element:"  
echo "${arr[0]}"
```

```
# To print a selected index  
element  
selected_index=3  
echo "Selected index element at  
index $selected_index:"  
echo "${arr[$selected_index]}"
```

To print elements from a particular index
echo "Elements from a particular index:"
echo "\${arr[@]:2}" # Prints elements starting from index 2
echo "\${arr[]:2}" # Prints elements starting from index 2*

To print elements in a range
echo "Elements in a range:"
echo "\${arr[@]:1:3}" # Prints elements from index 1 to 3
echo "\${arr[]:1:3}" # Prints elements from index 1 to 3*


```
# Search in the array  
search_result=$(echo "${arr[@]}"  
| grep -c "Jayesh")  
echo "Search result for 'Jayesh':  
$search_result"
```

```
# Search and replace in the array  
replaced_element=$(echo  
"${arr[@]}/Shivang/SHIVANG")  
echo "Array after search &  
replace: ${replaced_element[*]}"
```

```
# Delete an element in the array  
(index 3)  
unset arr[3]
```

```
echo "Array after deletion:  
${arr[*]}"
```



```
# Count the length of a particular  
element in the array  
element_length=${#arr[2]}  
echo "Length of element at index  
2: $element_length"
```

```
# Count the length of the entire  
array  
array_length=${#arr[@]}  
echo "Length of the array:  
$array_length"
```

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